

REMARKS

Claims 1-8 remain in the application. Claims 1-3 and 6-8 are in independent form.

The Office Action states that an Information Disclosure Statement has not been submitted for this application. An Information Disclosure Statement was filed for the parent application, USSN 10/018,201 August 7, 2002, a copy of which is attached hereto for your convenience. Reconsideration of the objection is respectfully requested.

Claims 7 and 8 stand objected to because of informalities in the claims. The Office Action states that the recitation of the treatment of individuals "in need" without the inclusion of a certain condition is incorrect. Claims 7 and 8 have been amended to more specifically recite that the patients are in need of increased neurological function and reconsideration of the objection is respectfully requested.

Claim 5 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. The Office Action states that claim 5 includes a trademark. The trademark has been replaced with the appropriate chemical name. Reconsideration of the rejection is respectfully requested.

Claims 1-8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the Moskowitz patent. Reconsideration of the rejection under 35 U.S.C. § 102(b), as anticipated by the Moskowitz patent, as applied to the claims is respectfully requested. Anticipation has always been held to require absolute identity in structure between the claimed structure and a structure disclosed in a single reference.

In Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 231 U.S.P.Q. 81 (Fed. Cir. 1986) it was stated: "For prior art to anticipate under §102 it has to meet every element of the claimed invention."

In Richardson v. Suzuki Motor Co., Ltd., 868 F.2d 1226, 9 U.S.P.Q.2d 1913 (Fed. Cir. 1989) it was stated: "Every element of the claimed invention must be literally present, arranged as in the claim."

The Office Action states that the Moskowitz patent teaches a method of treating strokes and the resulting neurological damage by administering nitric oxide releasing compounds. The therapeutic target of the Moskowitz approach is the reduction of cerebral infarction (i.e. volume of dead brain tissue) after ischemic stroke that is stroke caused by a lack of blood flow to the brain. Moskowitz seeks to increase blood flow to the brain to limit volume of infarction. In other words, the patent discloses treating injured brain in an attempt to salvage brain tissue. Further, the treatment of the Moskowitz patent is limited to times early after ischemic stroke when blood flow increase can reduce the volume of the damaged tissue. In the Moskowitz patent, the reduction of the infarction is mediated by administration of a substrate for NO before or early (within the first 1-2 hours) after stroke. The substrate is given from 16 hours before stroke to 2 hours after stroke. This enhances blood flow to the brain and thereby counteracts some of the loss of blood flow initiated by the stroke. The Moskowitz patent states in column 1 line 31 that, "the nervous system lacks the ability to regenerate," in column 1 lines 40- 44, "the ultimate size of the infarct which forms the basis of medical therapy is the extent of vascular support." Thus, according to the Moskowitz patent, the intervention must be designed to improve blood flow and thereby to reduce the ischemic lesion, because when the lesion is complete and cannot be reduced by treatment there is no benefit.

Additionally, the Moskowitz patent discloses that brain cannot regenerate. The data presented in the Moskowitz patent only relate to treatment of a model of ischemic stroke with a substrate of NO. All data presented by Moskowitz show a reduction of volume of cerebral infarction, dilation of blood vessels, and as noted in column 3 line 18, the approach of the Moskowitz patent is to "limit the extent of stroke-associated infarct." The patent discloses that treatment should preferably begin shortly after the

initiation of stroke and preferably at any point in time prior to the completion of the infarction process.

In contradistinction, the presently pending independent claims claim NO donors, PDE5 inhibitors and related compounds, for inducing brain remodeling and restoring neurological function, completely independent of the effect of NO donors on the volume of infarction. As disclosed throughout the currently pending patent application and specifically claimed, the functional benefit is derived from treatment under conditions in which the volume of brain damage is unaltered by the treatment. Further claimed the methods are used to treat and remodel viable brain. The method activates endogenous restorative mechanisms within the non-injured tissue, so as to compensate for the damage, and thereby to enhance neurological function. The therapy is designed to be given days and weeks after the injury, and the neurogenesis is totally independent of any affect of treatment of the lesion. The claimed method is specifically delayed until the completion of infarction, at 24 or more hours after stroke. The method and compound of the presently pending independent claims claim inducing brain remodeling an event that is independent of the reduction of the volume of cerebral infarction. There is no connection or association of reduction of volume of cerebral infarction and with the production of new brain cells. There is no requirement of the presence of a NO donor to induce brain remodeling and functional benefit. Since the Moskowitz patent does not disclose or suggest the method and compound of the presently pending independent claims, the claims are patentable over the Moskowitz patent, and reconsideration of the rejection is respectfully requested.

Claims 1-8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the Liao patent. Reconsideration of the rejection under 35 U.S.C. § 102(b), as anticipated by the Liao patent, as applied to the claims is respectfully requested. Anticipation has always been held to require absolute identity in structure between the claimed structure and a structure disclosed in a single reference.

The Office Action states that the Liao patent teaches upregulation of endothelial cell nitric oxide synthase expression by administration of HMG CoA reductase inhibitors. The Liao patent discloses that endothelial cell nitric oxide synthase can be upregulated by agents that disrupt cytoskeletal organization. As specified in column 5 lines 9-10, "the inventors provide a method for reducing brain injury resulting from stroke." As stated in column 8, lines 60-68, the method of the Liao patent invention is designed to reduce volume of infarction. The Liao patent specifically discloses that, "a functional test for measuring neurological deficits provided further evidence of reduction in brain injury in the treated animals versus controls." Thus, the Liao patent specifically relates to a reduction of neurological deficits to reduction of infarct.

In contradistinction, the presently pending independent claims claim a compound and method for treating neurological deficits that is independent of reduction of cerebral infarct volume. There is no relationship between volume of injury and brain regeneration. There is no disclosure in the Liao patent that suggests a relationship between NO donors, PDE5 inhibitors and the production of new neurons. The statement on page 8 by the Examiner that "the general promotion of neurogenesis must inevitably occur," stands in contradiction to the assertion by Liao of a direct relationship between reduction brain injury and reduction of neurological defects. Liao implies that reduction of neurological deficits only occurs within the context of reduction of volume of cerebral infarction, in direct conflict with the presently pending independent claims. Reduction of brain injury is not related to neurogenesis. The Liao patent does not provide any data or evidence that cognitive or functional deficits are reduced with treatment. All of the examples provided by the Liao patent involve the administration of a statin agent to the mouse 14 days prior to the induction of stroke (Examples 15,17,18). There were no measurements of neurological function performed. Liao only shows that the volume of cerebral infarction is reduced when treatment with a statin is initiated 2 weeks prior to stroke. Since the Liao patent does not disclose or suggest the method and compound of the presently pending independent claims, the claims are patentable over the Liao patent, and reconsideration of the rejection is respectfully requested.

The remaining dependent claims not specifically discussed herein are ultimately dependent upon the independent claims. References as applied against these dependent claims do not make up for the deficiencies of those references as discussed above. The prior art references do not disclose the characterizing features of the independent claims discussed above. Hence, it is respectfully submitted that all of the pending claims are patentable over the prior art.

In view of the present amendment and foregoing remarks, reconsideration of the rejections and advancement of the case to issue are respectfully requested.

The Commissioner is authorized to charge any fee or credit any overpayment in connection with this communication to our Deposit Account No. 11-1449.

Respectfully submitted,

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